Fact Sheets

SRS

L Area Reactor Seepage Basin

Background

The L Area Reactor Seepage Basin is located outside the L Area reactor facility in the central part of the Savannah River Site (SRS). It was constructed to receive radioactively contaminated purge water from the L Reactor Disassembly Basin.

The seepage basin was used from 1958 to 1968 and again from 1985 to 1988. During that time, process purge water was released to the basin via a 450-foot long, 3-inch diameter underground polyethylene pipe. Liquid waste from tanker trucks was also disposed in the basin via a flexible pipe that extended from an offloading pad at the north end of the basin into the basin itself. In addition to tritium and low levels of other radionuclides, the purge water may have contained trace amounts of non-radioactive organic and inorganic substances and detergents. By design, infiltration to the soil below the basin allowed a significant portion of the tritium to decay before the water outcropped to surface streams.

Environmental Concerns

In 1998, SRS performed field characterization studies to support preparation of the Technical Evaluation Report and Explanation of Significant Differences. The results confirmed the presence of three radionuclides; cobalt-60, cesium-137, and strontium-90 at levels that pose unacceptable health risks.

Environmental Actions and Plans

In 1999, SRS submitted a Plug-In Decision Document to the U.S. Environmental Protection Agency (USEPA) and the South Carolina Department of Health and Environmental Control (SCDHEC). The Plug-In Record of Decision (ROD) was issued in September 1999. The Plug-in ROD selected a common remedy, in-situ stabilization with a low-permeability soil cover system, for high risk, radioactively contaminated Operable Units that have similar historical uses, contaminants, and locations. The Plug-in ROD identified the L Area Reactor Seepage Basin as a candidate for the plug-in remedy.

A Technical Evaluation Report and Proposed Plan for amending the Plug-in ROD were approved by the USEPA and the SCDHEC. The Plug-in ROD was amended to remove in-situ stabilization as a component of basin remediation for this unit. Remediation of the L Area Reactor Seepage Basin began in 2002 and is scheduled for completion in September 2003. Remediation activities include the establishment of institutional controls, grouting of the pipeline, and placing a low-permeability cover over the basin.